Fall 2009

CS 409/609: Principles of Artificial Intelligence

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Information
Syllabus
Assignments

Tentative Syllabus (Subject to revision according to progress)

Day	Topic	Reading	Optional Reading
9/08/08	General Introduction to AI	RN 1	Artificial Intelligence at WikiPedia; Computing Machinery and Intelligence by A. Turing
9/10/08	Search Problems	RN 3.1-3.3	
9/15/08	Blind Search	RN 3.1-3.7	
9/17/08	A* Search and Heuristic Functions	RN 4.1-4.2	A* Search at WikiPedia
9/22/08	Local Search	RN 4.3-4.4, 7.6	
9/24/08	Local Search; Searching in Games	RN 6	
9/29/08	Searching in Games	RN 6	
10/01/08	Game Theory	RN 17.6-17.7	Game Theory at WikiPedia; The Tragedy of the Commons by G. Hardin; News; Traveler's Dilemma at WikiPedia Traveler's Dilemma at Scientific American
10/06/08	Summary of Search and Game Theory; Matlab Tutorial; Uncertainty and Probability	RN 13	Matlab Manual; Matlab Answers at MIT; Matrix Operations; File Operations; Plotting/Graphing
10/08/08	Recitation for Homework and Exam; Probabilistic Reasoning using Bayesian Networks	RN 14.1-14.3	Bayesian Network at WikiPedia;
10/13/08	Midterm		
10/15/08	Inference in Bayesian Networks	RN 14.4-14.5	Judea Pearl's classic paper; Belief Propagation at

			WikiPedia;
10/20/08	Learning with Maximum Likelihood	RN 20.2	
10/22/08	Learning with Hidden Variables	RN 20.3	
10/27/08	Hidden Markov Models; Speech Recognition	RN 15.3	HMM at WikiPedia; HMM tutorial by L. Rabiner; Examples
10/29/08	Neural Networks	RN 20.5	
11/03/08	Decision Trees	RN 18.3	
11/05/08	Decision Theory; Markov Decision Processes	RN 16.1-16.3; 17.1-3	Markov Decision Process at WikiPedia;
11/10/08	Reinforcement Learning	RN 21.1-21.6	Reinforcement Learning at WikiPedia
11/12/08	Statistical Machine Translation	RN 23.4	Machine Translation at WikiPedia; Machine Translation from Jurafsky and Martin's *Speech and Language Processing*; Google Translator